

Abstract Submitted
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Dynamical coupled channel calculation of pion and omega production¹ MARK PARIS, Jefferson Lab — The dynamical coupled channel approach developed at the Excited Baryon Analysis Center is extended to include the ωN channel to study π and ω -meson production induced by scattering pions and photons from the proton. Six intermediate channels, including πN , ηN , $\pi\Delta$, σN , ρN , ωN , are employed to describe unpolarized and polarized data. Bare parameters in an effective hadronic Lagrangian are determined in a fit to the data for $\pi N \rightarrow \pi N$, $\gamma N \rightarrow \pi N$, $\pi^- p \rightarrow \omega N$, and $\gamma p \rightarrow \omega p$ reactions at center-of-mass energies from threshold to $W < 2.0$ GeV. The T matrix determined in these fits is used to calculate the photon beam asymmetry for ω -meson production and the $\omega N \rightarrow \omega N$ total cross section and ωN scattering lengths. The calculated beam asymmetry is in good agreement with the observed in the range of energies near threshold to $W < 2.0$ GeV.

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